

## A new genus and species of Cheyletidae (Acari: Prostigmata) from South Africa

by

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A new genus, *Paramicrocheyla* is described and compared with the genus *Microcheyla*. Two new species, *P. spinula* and *P. unguina* are described, compared and illustrated.

### INTRODUCTION

During the past few decades there has been a conspicuous increase in interest in mites of the family Cheyletidae from different Acarologists throughout the world. This is due not only to the economic importance of the group, which includes predators of agriculturally harmful mites (Volgin 1958) and parasites on mammals and birds (Domrow 1965), their ecological, medical and veterinary importance (Gentele 1960 and Ewing *et al.* 1967), but also to the highly unusual morphology and biology of its members (Volgin 1966). Despite the above, detailed studies on the Cheyletidae are relatively rare. Literature on sexually immature stages especially seems to be scanty.

South African fauna of the Cheyletidae was studied by Lawrence (1954), Zumpt (1961), Meyer & Rodrigues (1966) and Meyer *et al.* (1973). Up to 1973 only 16 genera were known from Africa, yet Summers & Price (1970) mentioned 50 genera with 186 known species worldwide. Meyer (1980, unpublished thesis) collected 33 species, representing 19 genera, from the Afrotropical region.

The species reported on in this paper were collected from soil sampled in a *Burkea*-savanna ecosystem at the Nylsvley Provincial Nature Reserve in the northern Transvaal (24°29' S, 28°42' E).

Abbreviations used are: *Dl* for dorsolateral setae, *Dm* for dorsomedian setae and *Hu* for humeral setae. Leg chaetotaxy are abbreviated as *s* for simple setae, *so* for solenidia, *f* for flabelliform setae and *p* for peg-like setae.

Genus *PARAMICROCHEYLA*, gen. nov.Type-species: *Paramicrocheyla spinula*, spec. nov.

This genus resembles the genus *Microcheyla* very closely, but may be distinguished as follows: idiosoma with two prominent dorsal plates, covering less dorsal surface than in *Microcheyla*; the uniformity of these plates results in an oval-shaped idiosoma as in *Microcheyla*, *Samsinakia* and *Cheylonotus*; prodorsal plate with four pairs of *Dl*-setae ( $Dl_1$ – $Dl_4$ ), one pair of *Dm*-setae ( $Dm_1$ ) and a pair of lateral eyes; hysterosomal plate with three pairs of *Dl*-setae ( $Dl_5$ – $Dl_7$ ) and one pair of *Dm*-setae ( $Dm_2$ ); two pairs of *Dl*-setae ( $Dl_8$ – $Dl_9$ ) posterior of hysterosomal plate (hysterosoma of *Microcheyla* with six pairs of *Dl*-setae, two pairs of *Dm*-setae, lacking any setae not inserted on the hysterosomal plate); all dorsal setae flabelliform (*Dm*-setae of *Microcheyla* squamate); peritremes straight or with a slight anterior bend, two-segmented as in some species of *Microcheyla*, with the distal segment dilated; ventrally with three pairs of ventral, one pair of genital and two pairs of anal setae (*Microcheyla* with four pairs of ventral, one pair of genital, one pair of paragenital and three pairs of anal setae); all tarsi with rayed empodia, lateral claws present or absent.

*Paramicrocheyla spinula*, spec. nov., Female, Figs 1–12.

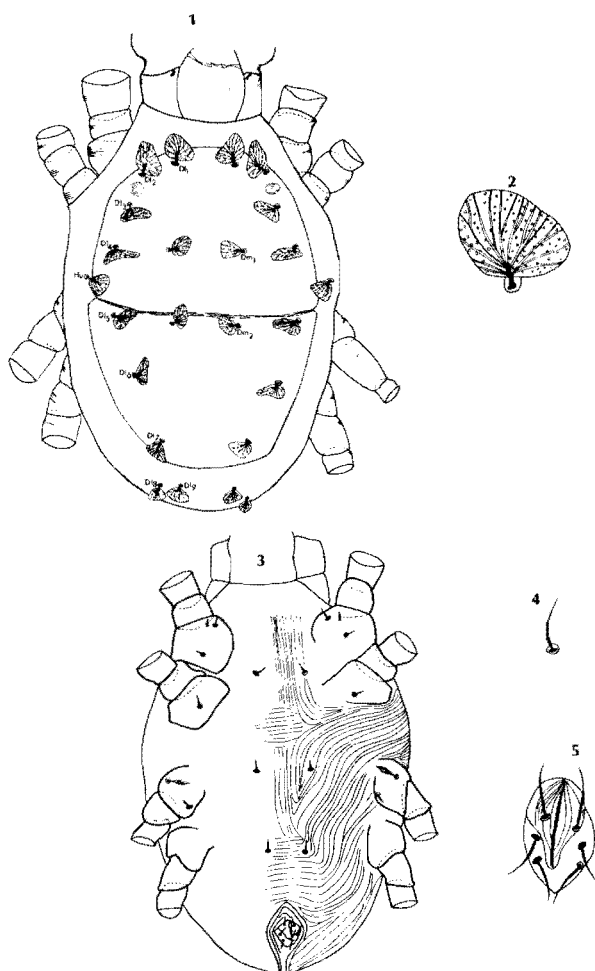
Dimensions: Length of body 150–160  $\mu$ m; length of gnathosoma 60–63  $\mu$ m; breadth of body 103–113  $\mu$ m.

Dorsum: prodorsal plate (Fig. 1) semi-elliptical; with four pairs of *Dl*-setae and one pair of *Dm*-setae, all being flabelliform (Fig. 2); with a pair of prominent lens-like eyes between setae  $Dl_2$  and  $Dl_3$ ; *Hu*-setae prominently dorsolateral (never ventrolateral as in *M. unguina*); opisthonotal plate (Fig. 1) similar to prodorsal plate, with three pairs of *Dl*- and one pair of *Dm*-setae; setae  $Dl_8$  and  $Dl_9$  well posterior of the opisthonotal plate and smaller than the rest of the dorsal setae.

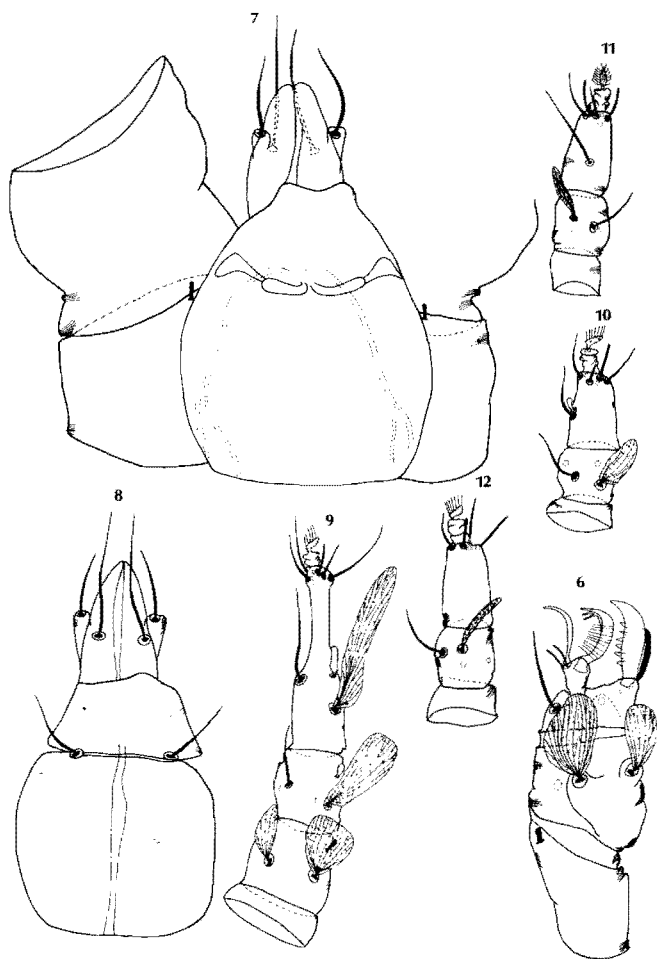
Venter: coxae well-defined in two groups (Fig. 3); intercoxal region with three pairs of small simple setae (Fig. 4); genito-anal orifice (Fig. 5) displays one pair of genital and two pairs of anal setae.

Gnathosoma: palpal tarsus (Fig. 6) with a scimitar-like seta, two small simple setae, a multi-rayed (8–12 rays) comb-like seta terminating in 3–5 lamellae and a large dorsolateral simple seta; tibia with a toothed claw (6–8 teeth), a ventral scimitar-like seta and a ventral flabellate seta on a blunt tubercle; palpal femur with one dorsal, one dorsolateral and one ventral seta, all being flabelliform, on integumentary elevations; inner dorsolateral surface of coxa with a prominent peg-like seta; gnathotectum (Fig. 7) globular, anterior margin bilobed; peritremes two-segmented, distal segment dilated, first segment continuous with internal trachea; hypostome with two pairs, and hypognathum with one pair, of long simple setae (Fig. 8).

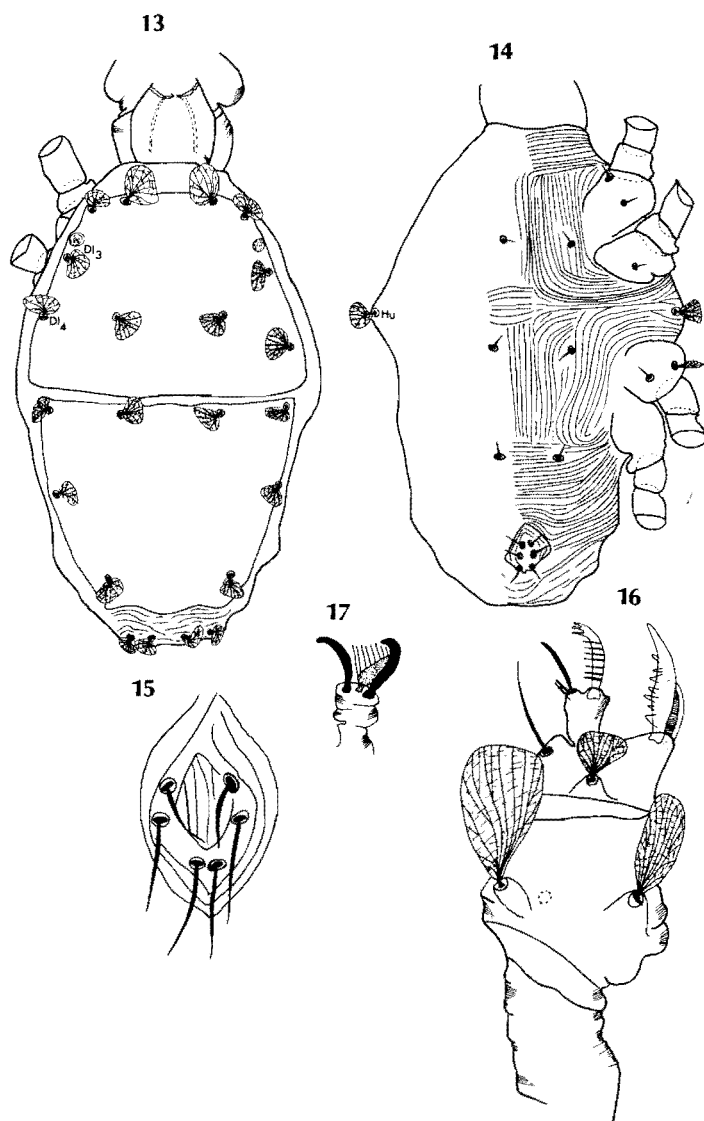
Legs: all tarsi (Figs 9–12) with multi-rayed empodia on annulated ambulacra; claws absent; leg chaetotaxy as follows: tarsi ( $7si + 1so + 1f$ ) – ( $7si + 1so$ ) –  $7si - 4si$ ; tibiae ( $1si + 1so + 3f$ ) – ( $1si + 3f$ ) – ( $1si + 3f$ ) – ( $1si + 3f$ ); genua ( $2f + 1p$ ) –  $2f - 2f - 0$ ; femora  $2f - 2f - 1f - 1f$ ; trochanters  $0 - 0 - 0 - 0$ ; coxae ( $2si + 1p$ ) –  $1si - (1si + 1f) - 0$ .



Figs 1–5. *Paramicrocheyla spinula*, **spec. nov.**, Female; Fig. 1. Dorsum; Fig. 2. Seta  $D1_1$ ; Fig. 3. Venter; Fig. 4. Ventral seta; Fig. 5. Genito-anal region.



Figs 6–12. *Paramicrocheyla spinula*, **spec. nov.**, Female; Fig. 6. Palp; Fig. 7. Gnathotectum; Fig. 8. Hypognathum; Figs 9–12. Tarsi I–IV.



Figs 13–17. *Paramicrocheylea unguina*, **spec. nov.**, Female; Fig. 13. Dorsum; Fig. 14. Venter; Fig. 15. Genito-anal region; Fig. 16. Palp; Fig. 17. Empodium and claw of tarsus I.

**MATERIAL EXAMINED:** Female holotype, 5 female paratypes, NYLSVLEY, TRANSVAAL, 1.x.1974–31.xii.1975, P. A. S. Olivier & E. A. Ueckermann (Acarological Collection, Department of Zoology, University of Potchefstroom).

***Paramicrocheyla unguina*, spec. nov., Female, Figs 13–17.**

The most prominent feature of this species is the presence of paired claws on all tarsi.

Dimensions: length of body 153–163  $\mu\text{m}$ ; breadth of body 83–107  $\mu\text{m}$ ; length of gnathosoma 63  $\mu\text{m}$ .

Dorsum: two faintly sclerotized plates (Fig. 13), covering more of the dorsum than in *P. spinula*; suture between prodorsal and hysterosomal plates prominent; posterior margin of hysterosomal plate crenate;  $Dl_1$ – $Dl_3$  and  $Dm_1$  –  $Dm_2$  similar to corresponding setae of *P. spinula* except for  $Dl_3$  and  $Dl_4$  being more circoid; *Hu*-setae prominently ventrolateral, never dorsolateral as in *P. spinula*.

Venter: ventral aspects (Fig. 14–15) similar to *P. spinula*, except for genito-anal setae being larger.

Gnathosoma: palpal femur (Fig. 16) large and robust; tubercles of flabelliform setae prominent; palpal coxae without peg-like seta; other gnathosomal features as for *P. spinula*.

Legs: all tarsi with lateral claws and haired empodia (Fig. 17); chaetotaxy with slight differences from that of *P. spinula*: tarsi ( $7si + 1so + 1f$ ) – ( $6si + 1so$ ) –  $6si - 5si$ ; tibiae ( $1si + 1so + 3f$ ) – ( $1si + 3f$ ) – ( $1si + 3f$ ) – ( $1si + 3f$ ) – ( $1si + 3f$ ); genua  $2f - 2f - 2f - 2f - 0$ ; femora  $2f - 2f - 1f + 0$ ; trochanters  $0 - 0 - 0 - 0$ ; coxae  $2si - 1si - (si + 1f) - 0$ .

**MATERIAL EXAMINED:** female holotype, 2 female paratypes, NYLSVLEY, TRANSVAAL, 1.x.1974–31.xii.1975, P. A. S. Olivier & E. A. Ueckermann (Acarological Collection, Department of Zoology, University of Potchefstroom).

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